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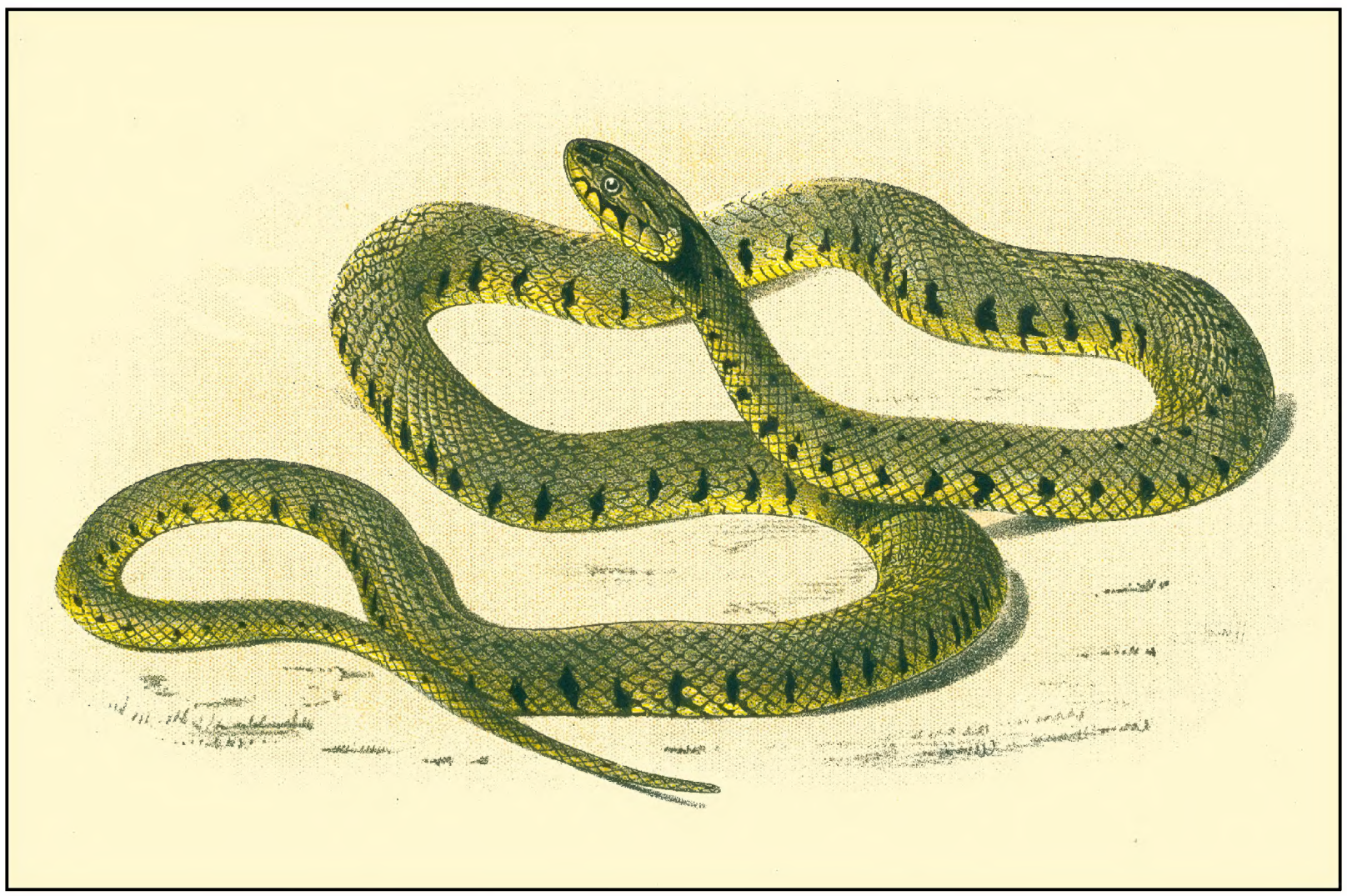

BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY
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New Township Records for Amphibians and Reptiles in Columbia County, Pennsylvania, USA

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Introduction

The occurrence and township-level distribution of native amphibian and reptile species within Columbia County in north-eastern Pennsylvania, USA, was recently reviewed in Hartzell (2016a). This work was primarily compiled based on museum and literature records and revealed many gaps in the known occurrence and distribution of herpetofauna within the county. In the time since the preparation of that manuscript, new information has come to light documenting novel county and township records for species within Columbia County. New species records for the county have been reported elsewhere and include records for *Cryptobranchus alleganiensis*, *Hemidactylium scutatum*, and *Graptemys geographica* (Hartzell, 2016b; Johnson et al., 2016; Tavano and Pitt, 2016). These records bring the total number of native species occurring in the county to 42. In addition, the presence of *Anaxyrus fowleri* was recently confirmed in the county via a voucher record (Hartzell, 2016c). The purpose of this present paper is to document new township records for amphibians and reptiles in Columbia County, primarily based on recent field observations. These records help fill distributional gaps for many species within the county and provide important, fine-scale point data for understanding the distribution of herpetofauna in this portion of Pennsylvania.

Methods

Records reported herein were typically the result of opportunistic field observations by the author from spring 2016 through summer 2017. Whenever possible, records were vouchered by digital photographs and/or audio clips (in the case of calling anurans) and submitted to the Pennsylvania Amphibian and Reptile Survey (PARS; www.paherpsurvey.org). In some cases, observations could not be vouchered; however, species were positively identified either via up-close examination or identified by calling (anurans). While these unvouchered records cannot be independently verified by other parties, these records are still reported as they at least document these species in time and place until vouchered documentation can be provided (*sensu* Cochran, 2001). In all cases, animals were released unharmed at the site of capture. Additional records are provided in the form of historic museum collection records not reported in Hartzell (2016a) or from review of other recent literature. Latitude and longitude data were either recoded on-site or closely approximated using Google Maps, and are reported in WGS 84 datum. As in Hartzell (2016a), the municipality of Bloomsburg is considered as a township based on its comparable size. Any other records observed within smaller municipalities are considered as occurring within the township that encompasses that municipality. Common names follow Crother (2012).

Results (New Township Records)

SALAMANDERS:

Ambystoma maculatum (Spotted Salamander): **Bloomsburg**: Turkey Hill Oxbow Area (41.022010, -76.456277). Specimens collected in the 1970s and held in the Natural History Collection at Bloomsburg University of Pennsylvania. This record was cited within the appendix in Hartzell (2016a) but inadvertently omitted from that manuscript.

Desmognathus fuscus (Northern Dusky Salamander): **Briar Creek Township**: Briar Creek Lake, spring feeding into northern shoreline of lake (41.068109, -76.290104). 6 June 2017. Adult in spring. **Conyngham Township**: Weiser State Forest-Roaring Creek Tract, intermittent stream flowing into Kline's Reservoir (40.836120, -76.360298). 6 October 2016. Two adults along a dry streambed. **Orange Township**: Stony Brook Creek along PA Route 487 (41.050450, -76.428691). 23 September 2016. Large adult under rock at margin of stream.

Desmognathus ochrophaeus (Allegheny Mountain Dusky Salamander): **Benton Township**: Benton, along Fishing Creek, just upstream of Benton Dam (41.194977, -76.380586). 21 July 2016. Adult on streambank. **Orange Township**: Spring feeding into Stony Brook Creek along PA Route 487 (41.050450, -76.428691). 23 September 2016. Two adults under cover rocks in a small spring. **Sugarloaf Township**: East Branch Fishing Creek, Jamison City (41.306060, -76.359724). 21 July 2016. Adult and juveniles along stream margin.

Eurycea bislineata (Two-lined Salamander): **Bloomsburg**: Turkey Hill Oxbow Area (41.022010, -76.456277), Specimens collected in the 1970s and held in the Natural History Collection at Bloomsburg University of Pennsylvania. **Pine Township**: Sereno, Little Fishing Creek (41.152728, -76.521831). 21 September 2016. Adult with autotomized tail on streambank. **Scott Township**: Unnamed tributary of Susquehanna River near the intersection of Edgar Ave and Old Berwick Rd (41.010061, -76.401717). 8 October 2016. Three adults along stream margin. **Sugarloaf Township**: Camp Lavigne Boy Scout Camp, Fishing Creek (41.237762, -76.370597). 11 September 2016. Several adults and juveniles along streambank.

Eurycea longicauda (Long-tailed Salamander): **Orange Township**: Green Creek at Patterson Covered Bridge (41.109698, -76.417383). 22 September 2016. Two adults on streambank.

Gyrinophilus porphyriticus (Spring Salamander): **Benton Township**: Benton, along Fishing Creek, just upstream of Benton Dam (41.194977, -76.380586). 21 July 2016. Adult on streambank. **Conyngham Township**: Weiser Forest, Roaring Creek Tract, along Roaring Creek Trail (40.836120, -76.360298). 10 March 2016. Adult crossing gravel road on

rainy night. **Mt. Pleasant Township**: Jakey Hollow Natural Area (41.067240, -76.487553). 20 March 2016. Larva in spring seep. **Orange Township**: Spring feeding into Stony Brook Creek along PA Route 487 (41.050450, -76.428691). 23 September 2016. Deceased adult.

Hemidactylium scutatum (Four-toed Salamander): **Conyngham Township**: (in Tavano and Pitt, 2016).

Plethodon cinereus (Eastern Red-backed Salamander): **Orange Township**: Kocher Park, along Stony Brook Creek (41.050251, -76.429210). 8 March 2017. Adult in riparian forest. **Sugarloaf Township**: Camp Lavigne Boy Scout Camp, Fishing Creek (41.243518, -76.375596). 6 June 2016. Three adults along streambank.

Plethodon glutinosus (Northern Slimy Salamander): **Bloomsburg**: Turkey Hill Oxbow Area (41.022010, -76.456277). 9 May 2016. Two adults in shale bank. **Scott Township**: Almedia, shale ridge adjacent to US Route 11 (41.243518, -76.375596). 7 May 2016. Several adults and juveniles.

Pseudotriton ruber (Red Salamander): **Conyngham Township**: Weiser Forest, Roaring Creek Tract, along South Branch Roaring Creek (40.836224, -76.375410). 25 March 2016. Adult along streambank. **Orange Township**: Kocker Park, along Stony Brook Creek (41.050251, -76.429210). 24 May 2017. Adult in Spring. **Sugarloaf Township**: Camp Lavigne Boy Scout Camp (41.240127, -76.370793). 18 January 2017. Adult in spring seep.

FROGS AND TOADS:

Anaxyrus americanus (American Toad): **Briar Creek Township**: Briar Creek Lake (41.068109, -76.290104). 24 April 2016. Calling heard and individuals observed in marshy area on western side of reservoir. **Madison Township**: State Game Lands 226, along Spruce Run Rd. (41.131832, -76.567963). 18 June 2017. Adult AOR.

Anaxyrus fowleri (Fowler's Toad): **South Center Township**: (in Hartzell, 2016c).

Hyla versicolor (Gray Treefrog). **Scott Township**: Fowlersville Rd., 0.6 km E Lightstreet (41.042728, -76.415238) 2 June 2016. Calling heard from 2200 to 2300 h.

Lithobates catesbeianus (American Bullfrog): **Benton Township**: Fishing Creek, 3.5 km N Benton (41.227891, -76.371639). 21 July 2016. **Bloomsburg**: Turkey Hill Oxbow Area (41.022010, -76.456277). 7 March 2016. Two young adults observed emerging from thawing oxbow lake. **Pine Township**: Sereno, Little Fishing Creek (41.152728, -76.521831). 21 September 2016. Young adult on streambank.

Lithobates clamitans (Green Frog): **Benton Township**: Benton, along Fishing Creek just upstream of Benton Dam (41.194977, -76.380586). 21 July 2016. Young adult on streambank. **Orange Township**: Mouth of Stony Brook Creek (41.047981, -76.428991). 8 March 2017. Dead adult in stream. **Sugarloaf Township**: West Branch Fishing Creek 2.2 km E Elk Grove (41.300647, -76.378698). 22 September 2016. Young adult in stream.

Lithobates palustris (Pickerel Frog): **Bloomsburg**: Turkey Hill Oxbow Area (41.022010, -76.456277). 7 March 2016. Young adult observed underneath ice within a small spring. **Orange Township**: Green Creek at Patterson Covered Bridge (41.109698, -76.417383). 22 September 2016. Two adults on streambank. **Sugarloaf Township**: West Branch Fishing Creek 2.2 km E Elk Grove (41.300647, -76.378698). 22 September 2016. Young adult on streambank.

Lithobates sylvaticus (Wood Frog): **Bloomsburg**: Bloomsburg Rail Trail along Fishing Creek (41.013731, -76.471381). 12 March 2016. Adults calling and amplexing in vernal pool. **Madison Township**: State Game Lands 226, along Spruce Run Rd. (41.131832, -76.567963). 18 June 2017. Adult DOR. **Orange Township**: Kocker Park, Stony Brook Creek along PA Route 487 (41.050483, -76.428916). 8 March 2017. Calling adults and egg masses in vernal pools. **Scott Township**: Espy Wetlands (41.007190, -76.421286). 8 March 2016. Adults observed calling in a vernal pool.

Pseudacris crucifer (Spring Peeper): **Benton Township**: Wetlands adjacent to Fishing Creek along Community Drive (41.191679, -76.386966). 10 April 2017. Calling heard in wetlands. **Bloomsburg**: Turkey Hill Oxbow Area (41.022010, -76.456277). 13 April 2016. Calling heard in wetlands. **North Center Township**: Small wetland along Fowlersville Rd. between Thomas Drive and Edward's Rd. (41.059404, -76.331079) 2 April 2017. Calling heard in wetlands **Sugarloaf Township**: Camp Lavigne Boy Scout Camp (41.240127, -76.370793). 6 June 2016. Calling heard in wetland area. **South Center Township**: Wetlands along U.S. Route 11, 2 km W Lime Ridge (41.025253, -76.362590). 12 March 2016. Calling heard in wetlands.

TURTLES:

Chrysemys picta (Painted Turtle): **Conyngham Township**: Weiser Forest, Roaring Creek Tract, boggy area along South Branch Roaring Creek (40.838932, -76.352093). 15 April 2016. Five individuals found in sphagnum bog.

Chelydra serpentina (Snapping Turtle). **Briar Creek Township**: Briar Creek Lake (41.068109, -76.290104). 24 April 2016. Large adult swimming near lake shoreline. **Conyngham Township**: Weiser Forest, Roaring Creek Tract, boggy area along South Branch Roaring Creek (40.838932, -76.352093). 15 April 2016. Two large adults found in sphagnum bog.

Graptemys geographica (Northern Map Turtle): **Bloomsburg**: Bloomsburg Bridge Crossing North Branch Susquehanna River (40.992652, -76.439334). 20 June 2016. Multiple individuals basking on a large emergent rock in river channel. **Catawissa Township**: Train tracks along North Branch Susquehanna River (40.984174, -76.452956). 7 July 2016. Adult female. **Montour Township**: (in Hartzell, 2016b).

SNAKES:

Diadophis punctatus (Ring-necked Snake): **Conyngham Township**: Weiser State Forest, Roaring Creek Track, along Roaring Creek Trial (40.833628, -76.376101). 6 October 2016. Adult in

upland forest.

Lampropeltis triangulum (Milksnake). **Scott Township**: Almedia, shale ridge adjacent to US Route 11 (41.243518, -76.375596). 17 May 2016. Young adult.

Nerodia sipedon (Common Watersnake). **Fishing Creek Township**: Huntington Creek, at Twin Covered Bridges (41.106998, -76.356115). 23 July 2016. Large adult in stream. **Hemlock Township**: Little Fishing Creek, 1 km upstream from mouth (41.026334, -76.480113). 15 June 2016. Young adult on streambank.

Pantherophis alleganiensis (Eastern Ratsnake): **Bloomsburg**: Bloomsburg Town Park, along Fort McClure Boulevard (40.989977, -76.449544). 16 June 2017. Snake observed DOR. **Scott Township**: JCT Edgar Ave and Old Berwick Rd. (41.009965, -76.401532). 29 October 2016. Adult DOR.

Storeria dekayi (Dekay's Brownsnake): **Bloomsburg**: Turkey Hill Oxbow Area (41.022010, -76.456277). Specimen collected in the 1970s and held in the Natural History Collection at Bloomsburg University of Pennsylvania.

Thamnophis sirtalis (Common Gartersnake). **Main Township**: State Game Lands 58 (40.953270, -76.396915). 10 July 2016. Juvenile in grassy trail within upland forest. **Orange Township**: Kocker Park, Stoney Brook Creek along PA Route 487 (41.050483, -76.428916). 8 March 2017. Two adults observed in riparian forest. **Sugarloaf Township**: Camp Lavigne Boy Scout Camp (41.240127, -76.370793). 19 April 2017. Deceased adult adjacent to spring feeding into pond.

Acknowledgments

I thank Clay E. Corbin for allowing me to examine herpetological specimens in the Bloomsburg University Natural History collection. I also thank Brittney Dieter and Michael Hartzell for accompaniment on some field excursions during which several of the records reported herein were noted. Many township records reported herein for salamanders and anurans were recorded incidentally during crayfish research permitted by the Pennsylvania Fish and Boat Commission (Permit #2016-01-0430; Type 1). Additional township records recorded in the field by the author were the result of either incidental encounters or conducted during work under Bloomsburg University IACUC approval.

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Identification of the Tadpoles of Hawaiian Frogs

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Abstract

At least six species of frogs (Amphibia: Anura) have been introduced and now occur in established, reproducing populations on the Hawaiian Islands. Two species reproduce without a free-living tadpole stage. The other species have tadpoles that can be identified to species by combinations of various morphological traits. A table summarizing diagnostic characteristics of each species' larvae is provided to aid field identification.

Introduction

Over the course of the past two centuries, humans have introduced numerous amphibians to the Hawaiian Islands, both inadvertently and intentionally (Bryan, 1932; Oliver and Shaw, 1953; McKeown, 1996, 1998; Kraus et al., 1999). Particularly notable are introductions of species:

- for human consumption—bullfrog (*Lithobates catesbeianus*), late 1800s.
- for insect control—wrinkled frog (*Glandirana rugosa*), 1890s; green and black poison-dart frog (*Dendrobates auratus*) and cane toad (*Rhinella marina*), 1932.
- via the pet and horticulture trade—Cuban treefrog (*Osteopilus septentrionalis*), 1980s; common coqui (*Eleutherodactylus coqui*) and greenhouse frog (*E. planirostris*), 1990s.

Six of these species now occur in established, reproducing populations and can be encountered regularly, at least on the archipelago's larger islands. McKeown's (1996) report of *O. septentrionalis* being established on Oahu, however, is not supported by vouchered evidence (Kraus, 2008, 2009), and there have been no recent reports of this species from the island. The report by Kraus et al. (1999) of an eighth species, the Martinique robber frog (*E. martinicensis*), occurring on Maui was based on misidentified specimens (Kraus and Campbell, 2002) and is thus not valid.

Distinctive color patterns, various morphological features (i.e., warts, enlarged parotoid glands, enlarged tympanum, dorsal ridges, toe pads, etc.), and characteristic vocalizations allow for the relatively easy field identification of the adult forms of these species. Identification of larval forms (tadpoles), however, poses a slightly greater but not insurmountable challenge. Available references to the region's herpetofauna (e.g., McKeown, 1978, 1996; Zug, 2013) include photographs of various life stages of these species, but provide only general descriptions of tadpoles and lack aids for separating species from each other. To help remedy this situation, I here summarize important diagnostic traits for each species' larvae in a simple tabular format that can be reproduced for use in the field or laboratory.

Diagnostic Characteristics

Table 1 includes several characteristics described by Altig and Johnston (1986), Johnston and Altig (1986), and Altig et al. (1998) that can be used to distinguish the tadpoles of five species. *Eleutherodactylus coqui* and *E. planirostris* are absent from the table because these frogs do not have a free-living tadpole stage. In these species, the female lays the eggs on damp moss or leaf litter, or inside a rolled or folded leaf. The male broods the eggs, keeping them moist until they hatch. Tiny froglets (~5 mm long) emerge in 14–17 days. The remaining four species occurring on the archipelago's islands (and *O. septentrionalis*) have a stereotypical life cycle involving free-living tadpoles and are included in the table, which can be reproduced for use in the field.

Eyes are considered "lateral" if they form part of the dorsal outline of the tadpole when viewed from above and "dorsal" if they do not. The aperture of a "medial" vent tube aligns with the axis of the ventral fin. If the vent tube opens to the right of the fin's axis, it is considered "dextral." "Laterally emarginate" oral discs possess indentations in their side margins. These persist when the discs are open (Figure 1). Oral discs that are "not emarginate" are not indented when the disc is opened. The labial tooth row formulae included in Table 1 follow Altig (1970), where the first number indicates anterior rows (i.e., rows in front of the mouth) and the number following the slash mark indicates the number of posterior rows. Numbers in parentheses indicate rows with medial gaps (Figure 1). Altig and McDiarmid's (2015) guide to larval amphibians includes descriptions and photographs of tadpoles for each of the species included in Table 1.

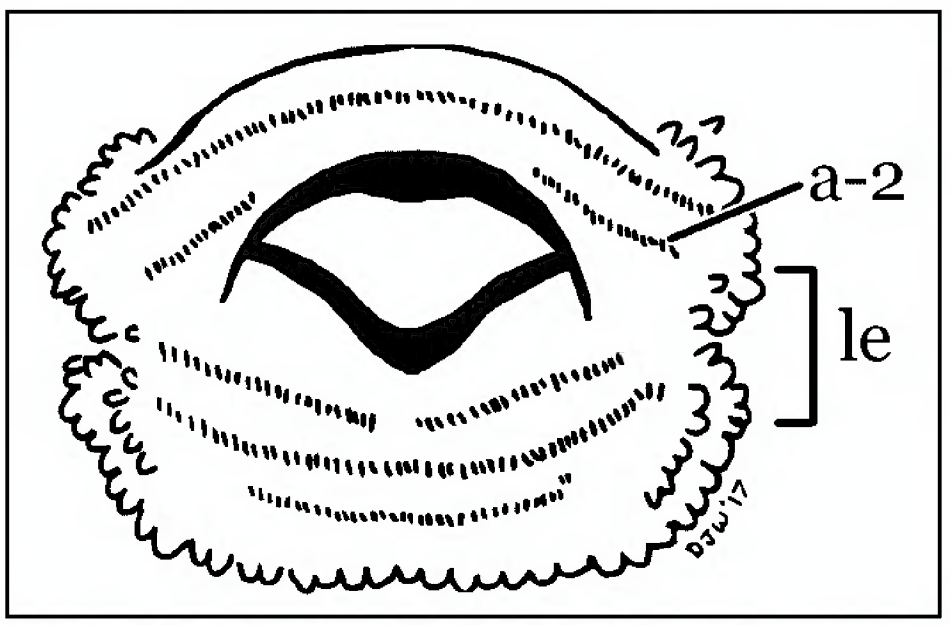

Figure 1. Mouthparts of wrinkled frog (*Glandirana rugosa*) tadpole depicting second anterior tooth row with medial gap (a-2) and laterally emarginated oral disc (le). Tooth row formula = 1-2(2)/3(1). See Park et al. (2006) for variability in lateral emargination. Reproduced with modifications from Gilbertson and Watermolen (1998).

Table 1. Characteristics of Hawaiian amphibian larvae.

Species	Eyes	Vent	Oral disc emargination	Oral disc papillae	Labial tooth row formula	Comments
Green and Black Poison-dart Frog (*Dendrobates auratus*)	Dorsal	Medial	Not emarginate	Wide dorsal gap in marginal papillae; marginal papillae relatively small	2(2)/3	Oral disc folds shut when not in use; tail fins uniformly dotted with brown and with narrow, transparent border; dorsal fin barely reaching body; to 25 mm total length; mostly found in bromeliads, tree holes, or shallow standing water; adult males may be seen transporting tadpoles to suitable pools; restricted to Oahu and Maui (Duerr and Hirayama, 2002; Masuoka, 2002; Kraus and Duvall, 2004); see also Silverstone (1975).
Bullfrog (*Lithobates catesbeianus*)	Dorsal	Dextral	Laterally emarginate	Wide dorsal gap in marginal papillae	2(2)/3(1)	Dorsal fin with notable arch and small black dots; body not notably depressed, with yellow / golden band at mid-body; belly white; to 140 mm total length; large, open lentic and lotic sites; all major islands.
Wrinkled Frog (*Glandirana rugosa*)	Dorsal	Dextral	Laterally emarginate (Figure 1)	Wide dorsal gap in marginal papillae (Figure 1)	1-2(2)/3(1)	Dorsal fin with low arch and lacking black dots or only finely mottled; body depressed, with dorsum uniformly brown but lacking discrete dots and lacking yellow band; belly white; to 80 mm total length; lentic and slower parts of lotic sites; most major islands, but not Lanai or Molokai; see also Okada (1966) and Gilbertson and Watermolen (1998) for descriptions and Park et al. (2006) for variability in form.
Cane Toad (*Rhinella marina*)	Dorsal	Medial	Laterally emarginate	Dorsal and ventral gaps in marginal papillae	2(2)/3	Tail fins clear; body rounded in dorsal view; dorsum black, silvery white with black spots below; relatively short tail; dorsum of tail muscle uniform, rarely broken with contrasting areas but never banded, even in preserved specimens; nostrils enlarged; to 25–30 mm total length; nearly any lentic or lotic site, including anthropogenic sites; all major islands.
Cuban Treefrog (*Osteopilus septentrionalis*)	Lateral	Dextral	Not emarginate	Wide dorsal gap in marginal papillae	2(2)/4(1)	Tail fins darkly mottled; heavily pigmented body, with transparent belly (intestinal coil visible); 5–6 mm at hatching, to 25–32 mm total length; possibly on Oahu; see also Duellman and Schwartz (1958) and Lannoo et al. (1987).

Discussion

The tadpoles of Hawaiian frogs have been the subject of relatively little study. This may, in part, be due to a belief that they are difficult to identify. Distinct combinations of readily recognizable morphological features, however, provide a practical means for field identification. Table 1 will hopefully facilitate such efforts and support further work on this often overlooked life stage.

Acknowledgments

Dougal Walker, a friend and colleague, helped prepare Figure 1. I appreciate his assistance.

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On Common Herp Names, and Why They Never Caught on in the Majors

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This author will never forget the day he learned that his favorite viper would henceforth be officially known as the "Western Diamond-backed Rattlesnake." It came at a very bad time in my life. I had just recently figured out that it wasn't humanly possible to rally herpers around even the best of causes. And then, just when I *thought* I had hit rock bottom, along comes this SL, er-uh, SS (close)-uh-dingleberries, er-uh SSAR (yeah—that's it!) edict to give *my* viper this new ghastly common name. I immediately, without any regard of who seemed to be calling these common-named shots, ***hated*** the decision. ***Nobody*** has spent more time with this viper than I. I should have been consulted with this whole hyphen and Erectile Dysfunction (ED) endings bit *before* it happened. Even if they had just included me on *Crotalus atrox* with their learned decisions on how best to proceed, I might have been able to halt what was obviously a *bad* train of thought. I *promise* that I would have at least tried to discourage them—and possibly succeeded—had I just been aware it was happening. They did not take Roger Repp into their confidence. While that normally is a sage decision, in this case, it was *not*. I would have talked to them like a Dutch uncle!

Mankind will never know *exactly* what happened the evening that many herpetological sluggers aggregated together, (which is *always* a bad idea), to set the standard way to talk herps to each other. It could have been so easy. It could have been done so smart. While I was (*tragically*) not there, I'm thinking that I *know* what must have happened.

As near as I can figure, late in the evening of the final hour of the deadline to get these names down, somebody showed up with some paint guns, complete with all the colors of the rainbow in the corresponding paint cartridges. They had all manner of paint guns, from Uzis to Burp Guns to 50-caliber machine guns on tripods. Eventually, the highly inebriated her-pet-o-tologists figured out how to load their weapons. They would use these to create the new common names for the herpetofauna of North America. All that was needed was a clean wall for them to spatter their thoughts upon. Roughly 1000 square feet of extravagantly decorated motel lobby wall was next effectively stripped clean. One thousand square feet of unblemished white wall was now ready for their handiwork. This was done so that random bits of the English language could be fired against the wall in a blazing and befuddling manner.

One can only imagine the carnage of the moment. It must have been a glorious mess. Envision a bunch of otherwise gentle eggheads who are suddenly armed to the teeth with their new toys, inspired by gallons of Old Thunderbird and a burning desire to rally herpers around the cause of unifying the common names of herpdom. Random bits and pieces of complic-ated grammar were let loose in a fusillade of gaudily-colored hyphens and an extreme overabundance of the letters "E" and "D." The last man standing quickly deciphered the confusing gibberish, got it on a jump drive, and then collapsed to the floor where the rest of his comrades resided. And then, while *they* all rested comfortably in their own vomit, *we* got stuck with a bunch of common names that morph us *all* into a bunch of stuttering fools!

For example, I used to be able to tell my friends "I saw three Diamondbacks yesterday." The plural form of the word is a piece of cake to pronounce. Now, let's add the hyphen and that damnable eee dee ending, and try to pronounce its plural form. "I saw three Diamond-backeds yesterday." Don't just read it, herpers, say it out loud! "Diamond-backeds." Every time I try to say it, my upper dentures come flying out of my mouth. But let's not stop there. Ridge-nosed? "I saw three Ridge-noseds yesterday." Hog-nosed? "I saw three Hog-noseds yesterday." Long-nosed, Patch-nosed, Hook-nosed, heaven knows—*we're screwed*! Why would they do this? And why take an animal that is by nature linear, and break it in half by putting a hyphen in the middle of it? It's cruelty to animals, and it's a bloody crime, I say!

I know damn well that the SSAR folk are all lizard people. I know that because the "Whiptail Lizard" is *not* the "Whip-tailed Lizard." *They* don't want to be looking like idiots when talking about *their* favored animals. On top of this, they're laughing at us snake folk. "Look at that idiot trying to pronounce 'Diamond-backeds.' This is *funny*! How can we screw these snake geeks even *more*?"

Well, I have decided that if you can't beat them, join them. And what is good enough for me ought to be good enough for the rest of the world. With this in mind, I first fired off a letter to Jerry Colangelo, who was then the owner of Major League's Baseball franchise "The Arizona Diamondbacks." I was pleasant, but firm in my demands that they change their name to "The Arizona Diamond-backeds." After all, I reasoned, a team of the foremost grammatical experts in the world, one of whom may have minored in English, had brought about this change. It was time to invest a few cool million into changing their logo so that they, too, could join the rest of us snake geeks in being a bunch of staccato-speeched halfwits.

But I didn't stop there. I also went for a face-to-face meeting with Roger Goodell, the Commissioner of the NFL. Rog and me are good buddies, we go way back. Anyway, I carefully laid out the situation to Rog. For reasons already described, the terms describing the personnel on the playing field needed to be changed. The guy who goes around loudly screaming "Omaha," and "hut-hut-hut" would henceforth be known as the "Quarter-backed." The guys who run the ball into the line (and in the case of the Bears, promptly fall down), will be called the "Half-backed" and the "Full-backed." The big guys at either end of the offensive line who sometimes block, and sometimes go out as receivers will be known as the "Tight-ended."

Rog didn't like any of this—especially the "Tight-ended" part. He thought the whole notion of taking something that was already simple, established and accepted, and turning it into a challenge to pronounce, was ridiculous. And neither did Mr.

Colangelo respond to my request to change the name of the Arizona Diamondbacks. What this shows is that even the Jocks—who are normally thought of as cretins by the grammatically inclined—are smarter than the elite name mongers among us. The Arizona Diamond-backeds? Really?

While this author agrees with the notion that unifying the common names of our charges is definitely a good idea, can we not think of a way to keep it simple?

This here is Roger Repp, signing off from Southern Arizona, where the turtles are strong, the snakes are handsome, and the lizards are all above average.

Minutes of the CHS Board Meeting, September 15, 2017

Rich Crowley called the meeting to order at 7:42 P.M. Board members Dan Bavirsha, John Bellah, Lisette Chapa, Morgan Lantz, Andy Malawy, Linda Malawy and Jessica Wadleigh were absent. A quorum was not present. The minutes of the August 18 board meeting were read and accepted.

Officers' Reports

Treasurer: Copies of the August financial report were distributed.

Membership secretary: Mike Dloogatch read the list of expiring memberships. Mike sent email reminders to those who had been mailed renewal cards, and to those whose memberships had just expired.

Media secretary: Morgan Lantz has resigned from this position.

Sergeant-at-arms: Attendance at the August 30 general meeting was 31.

Committee Reports

Library: CHS library books are cataloged online at <www.librarything.com>. New librarian Joan Moore is looking into renaming our catalog to make it easier to find. She plans to rotate books on the cart with those in storage.

Nominating committee: Kim Klisiak and Mike Scott are still searching for additional candidates.

Picnic recap: Attendance was 30 adults, 10 kids, plus four Discovery Center volunteers. Ample food and drink was available.

Old Business

Scanning old *Bulletins*: The lowest price Mike Dloogatch could find online for scanning bound material was $.40/page. John Palis has offered to do the job for $.32/page. Mike moved to allocate $600 to have John scan in six years of *Bulletins* (1990–1996) so they can be made available on our website. Gail Oomens seconded. Due to the lack of a quorum the vote was conducted by email, with the motion passing, 7 in favor, 4 not responding.

The meeting adjourned at 9:47 P.M.

Respectfully submitted by recording secretary Gail Oomens

What You Missed at the September Meeting: Lee Walston

John Archer
j-archer@sbcglobal.net

Having been in the military and seen some of the conservation work that is done on military bases, I was particularly intrigued with the topic of the September talk. Lee Walston titled his talk, "Conservation of Amphibians and Reptiles on Federal Lands." Unfortunately, I was unable to attend the talk. My disappointment was mitigated somewhat by our vice president, Jessica Wadleigh, who was nice enough to record Lee's talk for me. Because of that, you'll be able to get some idea of the talk, but you and I will regret not being able to meet Lee. There was much I would have liked to discuss with him regarding what he presented.

Lee Walston. Photograph by Dick Buchholz.

Lee began with a photo of himself at a young age holding a garter snake, surely a picture that many of us could duplicate from our own files, which might make for an interesting photo spread in the bulletin. Send in the youngest picture you have of yourself with your first herp and I'll see if I can talk Mike into publishing them. Include your name, age at the time of the photo, location, and what the herp is. This could fill a few pages I think.

Lee describes himself as a lifelong Illinois resident and herp enthusiast. He acquired a B.S. from Southern Illinois University, praising the diversity of herp species in that area, and attended Eastern Illinois University for his M.S. in biology where he studied the response of pond-breeding amphibians to the introduction/removal of predatory fish. "They usually don't like fish."

After school he worked for the Florida Fish and Wildlife Conservation Commission and the U.S. Environmental Agency before getting hired at Argonne National Laboratory as an ecologist working with issues associated with renewable energy developments. He also works on conservation issues on federal lands, of which there are about 640 million acres.

He first talked of studies on the New Boston Air Force Station, a 2800-acre former bombing range in Southern New Hampshire now used mostly for satellite tracking and support. It has a population of endangered Blanding's turtles (*Emydoidea blandingii*). Lee assisted the station in assessing habitat use, conservation status, and the effects of human activities on the turtles with capturing, trapping and radio tracking. Activity of the turtles was concentrated in the most populated areas of the station and his team came up with solutions to mitigate the dangers of road crossings.

They also captured and radio-tracked eastern hognose snakes (*Heterodon platirhinos*). Their surveys confirmed the findings of other hognose studies and stressed the importance of managing early successional habitats with sandy soils for the snakes and other imperiled species that rely on the same habitat.

Lee followed with his overview of how renewable energy development is affecting populations of the desert tortoise (*Gopherus* spp.) He listed the direct and indirect impacts of development on the tortoises and provided methods for mitigating detrimental impacts.

Lastly, Lee let the audience try and guess his favorite herp, which an audience member guessed as "salamanders," and which Lee admitted was ambystomatid salamanders, because they're always smiling.

Lee had much to say about the conservation efforts on federal lands. In place are many regulations that make lands belonging to the federal government some of the best places to protect populations of threatened and endangered animals of all kinds. I'm truly sorry I didn't get to meet him, but happy to have the opportunity to listen to his talk. Maybe I'll meet him sometime in the future with my questions.

Herpetology 2017

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

REINTRODUCED CHINESE GIANT SALAMANDERS

L. Zhang et al. [2017, Journal of Herpetology 51(3):417-424] note that captive breeding and reintroduction have been increasingly used to restore endangered amphibians worldwide. Knowing habitat requirements for targeted species will help to enhance post release settlement and contribute to the success of reintroduction projects. To collect critical information on habitat requirements of the poorly documented Chinese giant salamanders (*Andrias davidianus*), the authors reintroduced 31 juveniles at two streams in central China and monitored them through radio telemetry from May 2013 to September 2014. Fourteen environmental variables were recorded twice a month (except during winter) at salamander locations and random locations. Systematic transects were also conducted along streams to collect data on environmental variables and prey species. Habitat selection by salamanders was examined at two spatial scales: home-range scale and stream-reach scale. At the home-range scale, water quality variables were not different between salamander locations and random locations, although salamanders were found in deeper water, used larger boulders, and were closer to boulders. Regression models confirmed that presence of salamanders was positively associated with boulder size, river depth, and canopy cover but negatively associated with distance to boulders. At the stream-reach level, only the average water velocity was lower within home ranges than out of home ranges; however, no difference was found between core home ranges and out of home ranges. Large boulders were the most important variable selected by salamanders. Plenty of large boulders in the streams, together with evidences of postrelease growth, indicate the two streams likely are providing suitable giant salamander habitat.

RESPONSES TO ASH BY TWO LIZARD SPECIES

M. Mora and A. Labra [2017, Journal of Herpetology 51(3): 388-395] note that fires and volcanic eruptions produce ash that may negatively affect survivors of the disturbances themselves. Therefore, animals are expected to avoid areas covered by ash when possible. They tested this prediction by determining the substrate selection, ash vs. soil, in two insectivorous *Liolaemus* lizard species. Each species was exposed to the type of ash it is most likely to encounter in its habitat: fire ash for *Liolaemus lemniscatus* and volcanic ash for *Liolaemus pictus*. The ability of these species to track insect scents in ash was also studied, as the effectiveness of scent tracking, and hence the ability to find food, may be reduced in ash. Contrary to expectations, both species explored ash more than soil, and they were able to detect insect scents in ash. The authors concluded that at least shortly (e.g., days) after a disturbance involving ash production, surviving lizards may not avoid ash that may have negative impact on their health. Lizards would be able to find insects in substrates covered by ash by tracking their scents, however, suggesting that starvation may not necessarily be an immediate cause of mortality after a fire or a volcanic eruption.

EFFECTS OF DENSITY ON BROWN ANOLES

D. M. Delaney and D. A. Warner [2017, Animal Behaviour 129: 31-41] note that all organisms have specific habitat requirements that allow them to properly function in their environment. For many organisms, individuals shift habitat choice as they age because optimal habitats vary across life stages. Despite age-specific habitat use in a variety of taxa, identification of the causal factors driving such variation is limited by a lack of experimental studies. Field observations of the brown anole lizard, *Anolis sagrei*, show that juveniles use low, narrow perches whereas adults use relatively higher and thicker perches. The authors hypothesized that this variation is driven by interactions between age classes, rather than age-specific preference for microhabitat. They manipulated adult and juvenile densities in field enclosures with artificial trees to examine how inter-age class competition influences microhabitat choice. It was predicted that juveniles would move to less desired microhabitats as adult density increased (i.e., individual behavioral response) and/or adults would negatively affect juvenile survival (via competition or cannibalism) in ways that would contribute to age-specific habitat use (i.e., natural selection). It was found that adult males, but not females, reduced juvenile survival. However, neither adult male nor female density influenced juvenile microhabitat choice (i.e., perch height, width or substrate) via individual behavioral response or natural selection. Also tested was whether juveniles influence adult microhabitat choice. As predicted, adults did not vary in microhabitat choice in response to juvenile presence. This study provides a rare and robust assessment of the role of age- and sex-specific density in generating variation in behavior and survival under natural conditions.

THE TRADE IN SCORPION MUD TURTLES

S. Silva de Cristo et al. [2017, The Herpetological Journal 27(4): 361-367] studied the trade in the scorpion mud turtle, *Kinosternon scorpioides*, on Marajó Island, Brazil, from hunting to final consumption. They conducted semi-structured interviews at the urban centers of the cities of Soure, Salvaterra and Cachoeira do Arari, where they investigated: A) the socioeconomic profile of the merchants; B) the origin, form and frequency of marketing *K. scorpioides*; and C) the demand for the product. Hunting was carried out using hand collection, probing and burning. They were hunted for two reasons: personal consumption and sale, which was conducted in urban centers. The hunters knew the empirical aspects of the species biology in the wild: habitat, trophic ecology, and reproduction, among others. Trade in *K. scorpioides* is still a strong activity on Marajó Island, and the legal regulations are not enough to inhibit this practice, which poses a threat to the future of this species in this area. Educational efforts and establishment of captive breeding programs could allow the local population to produce and consume this species in a more sustainable way, and contribute to employment, to local family income, and to conservation of the species.

Advertisements

For sale: **highest quality frozen rodents**. I have been raising rodents for over 30 years and can supply you with the highest quality mice available in the U.S. These are always exceptionally clean and healthy with no urine odor or mixed in bedding. I feed these to my own reptile collection exclusively and so make sure they are the best available. All rodents are produced from my personal breeding colony and are fed exceptional high protein, low fat rodent diets; no dog food is ever used. Additionally, all mice are flash frozen and are separate in the bag, not frozen together. I also have ultra low shipping prices to most areas of the U.S. and can beat others shipping prices considerably. I specialize in the smaller mice sizes and currently have the following four sizes available: Small pink mice (1 day old—1 gm) , $25 /100; Large pink mice (4 to 5 days old—2 to 3 gm), $27.50 /100; Small fuzzy mice (7 to 8 days old—5 to 6 gm) , $30/100; Large fuzzy mice / hoppers (10 to 12 days old—8 to 10 gm), $35/100 Contact Kelly Haller at 785-234-3358 or by e-mail at kelhal56@hotmail.com

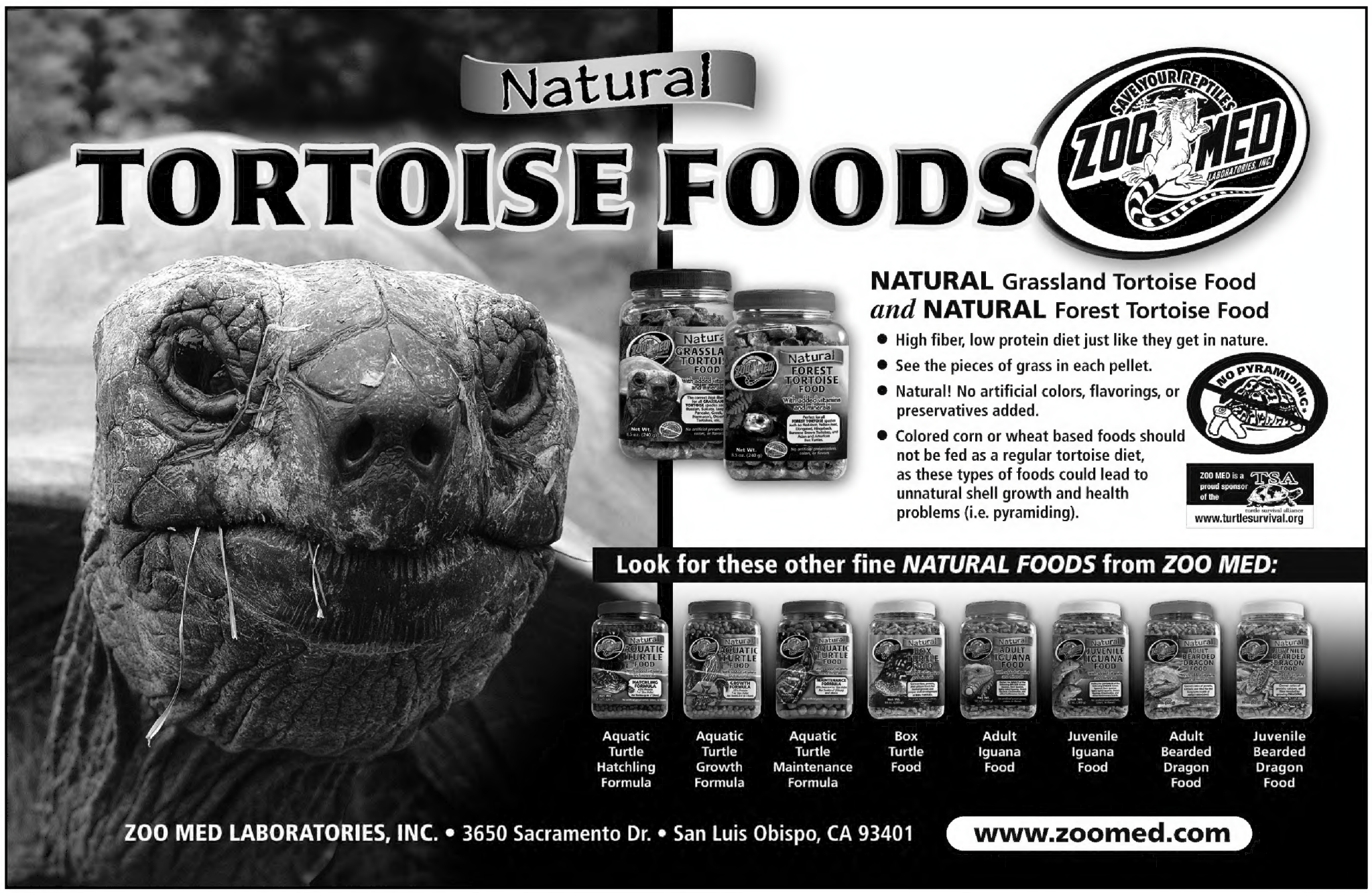
For sale or trade: Probable pair of albino Harquahala rosy boas. They were born in my home in late 2016 and are feeding on f/t peach fuzz mice. Pure locality animals exhibiting a recessive gene. Viewing is possible, parents on site. I can drive to meet a reasonable distance, or ship if you are not local. Discount if you pick them up from my home. Cash, credit card or PayPal. Call or text 510-318-1715, or email elenabmoss@gmail.com.

Herp tours: **Costa Rica herping adventures**. Join a small group of fellow herpers for 7 herp-filled days. We find all types of herps, mammals, birds and insects, but our target is snakes. We average 52 per trip, and this is our 10th year doing it. If you would like to enjoy finding herps in the wild and sleep in a bed at night with air-conditioning, hot water and only unpack your suitcase once, instead of daily, then this is the place to do it. Go to our web-site http:// hiss-n-things.com and read the highlights of our trips. Read the statistics of each trip and visit the link showing photos of the 40 different species we have found along the way. E-mail at jim.kavney@gmail.com or call Jim Kavney, 305-664-2881.

Line ads in this publication are run free for CHS members—$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to mdloogatch@chicagoherp.org.

NEW CHS MEMBERS THIS MONTH

Cooper Fell
Lee Walston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News and Announcements

2018 CHS HERPETOLOGICAL GRANTS PROGRAM

The mission of the Chicago Herpetological Society is education, conservation and the advancement of herpetology. To further this mission, the CHS provides grants of up to $1,000 in the following categories:

1. Illinois Herpetology
2. Graduate Student Research in Herpetology
3. Undergraduate Research in Herpetology
4. Conservation
5. Captive Management, Husbandry and Propagation

The number of grants awarded in each category will depend on the grant applications received; it is possible that not all categories will receive awards and some categories may receive more than one award. The Grants Committee reserves the right to reassign the category under which a given proposal is submitted.

To qualify for a grant, the applicant must be a member of the Chicago Herpetological Society as of December 31, 2017. In accepting a grant, the recipient agrees to acknowledge the Chicago Herpetological Society in any publications or public presentations of research funded by this grant. Further, the recipient agrees to abide by all state and federal laws.

Recipients must submit a short report of their research findings to the CHS within 6 months of their anticipated completion date. The report should be written for a general audience and be suitable for publication in the CHS *Bulletin* or on the CHS webpage. This requirement may be waived if results will be published in a peer-reviewed journal within a year. Recipients may be invited to present a program at a CHS general meeting.

Applications must include the following:

1. Project title
2. Applicant's name, address, phone and email
3. Submission category
4. Introduction—Provide background for the proposed work. Include a clear statement of the objectives of the proposed work.
5. Materials and methods—Describe the study site and the materials and methods (in non-technical terms) that will be used to accomplish the objectives of the proposed research. Attach plans, diagrams and maps as necessary. Indicate whether you have an approved Animal Care (IACUC) protocol covering the proposed methods or whether you will be submitting such a protocol.
6. Applicability and broader implications—How does this work apply to conservation, education and the advancement of herpetology?
7. Budget—Indicate the budget for the entire project and make clear what portion the CHS grant money would fund.
8. Anticipated completion date for the research
9. Applicant curriculum vitae
10. Letters of support—Student applicants must include a letter of support from a faculty advisor. For non-academic individual and institutional applicants, letters of support from collaborating partners or institutions are strongly encouraged. Letter(s) of support may be emailed and should include an address and phone number at which the writer can be contacted. Letter(s) of support may also be sent by postal mail.

Proposals should be submitted as email attachments. Attachments should include the applicant's name in the file name. Proposal text should not exceed five double-spaced pages (excluding literature cited, applicant's CV, and letters of support) and should be typed using a common font (e.g., Arial, Times, Courier) no smaller than 10 pt. Applications must be received by December 31, 2017, and awards will be announced by February 15, 2018.

Proposals or questions should be emailed to grants@chicagoherp.org

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, October 25, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Chris Pellecchia**, a Ph.D. candidate at the University of Southern Mississippi, will speak on "Conservation and Ecology of Endangered Rock Iguanas in the Dominican Republic." Chris is a staff member of the International Reptile Conservation Foundation, and is also a member of the IUCN SSC Iguana Specialist Group. His research interests include exploring and understanding patterns in population/community ecology, evolution and conservation biology of reptiles.

The November 29 meeting will include the annual election of officers and members-at-large of the CHS Board of Directors. **David Mifsud**, co-author of the recently revised edition of *Amphibians and Reptiles of the Great Lakes Region*, will speak about "Tortoise Conservation in Madagascar."

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago's newest museum—the **Peggy Notebaert Nature Museum**. This beautiful building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

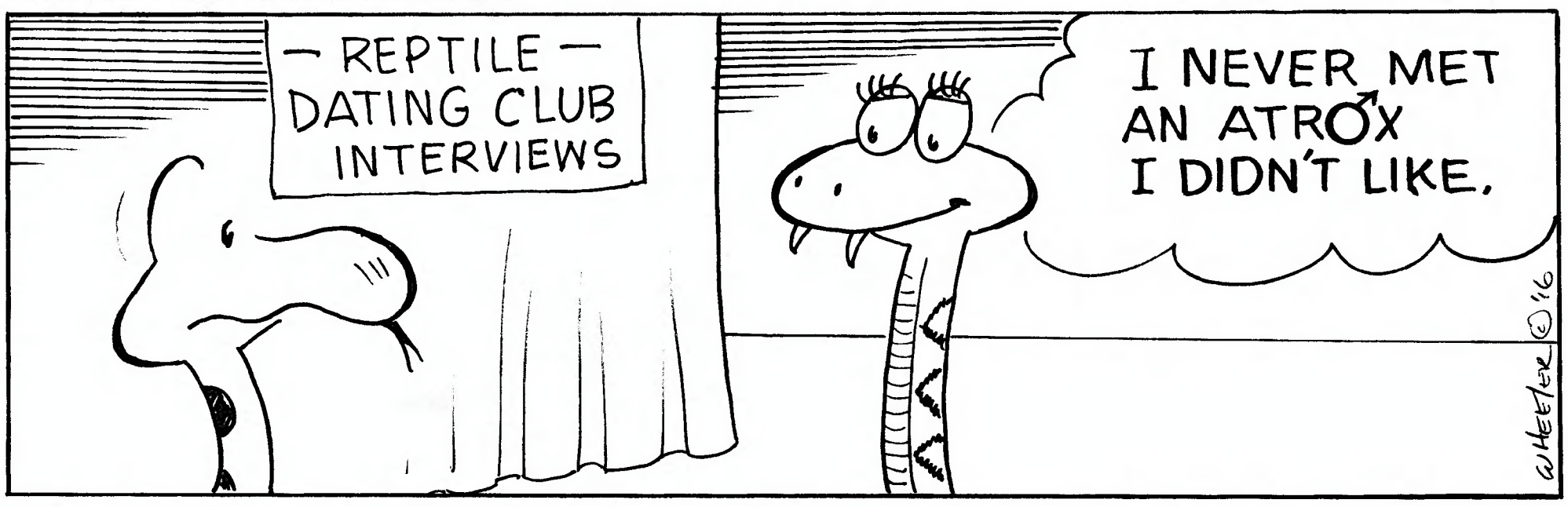
Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., Friday, November 17, 2017, at the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg.

The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the group's Facebook page.

THE ADVENTURES OF SPOT



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